(19) Europäisches Patentamt
European Patent Office
Office européen des br vets

(11) Publication number: 0 044 649
A1

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: 81303048.3

(51) Int. Cl.³: B 60 J 5/10

(22) Date of filing: 03.07.81

(30) Priority: 04.07.80 GB 8021998

(43) Date of publication of application:
27.01.82 Bulletin 82/4

(84) Designated Contracting States:
DE FR IT

(71) Applicant: TALBOT MOTOR COMPANY LIMITED
Administrative Centre P.O. Box 122A Abbey Road
Whitley, Coventry, CV34GB(GB)

(72) Inventor: Ludford, Peter
27 Guthlaxton Avenue
Lutterworth Leicestershire LE17 4ET(GB)

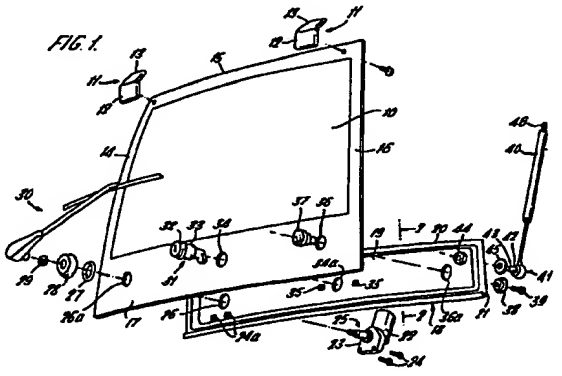
(72) Inventor: Attwood, Stanley
12 Hermitage Way
Kenilworth Warwickshire(GB)

(74) Representative: Bayliss, Geoffrey Cyril et al,
BOULT, WADE & TENNANT 27 Furnival Street
London EC4A 1PQ(GB)

(54) Vehicle tailgate assembly.

(57) A vehicle tailgate assembly is disclosed. In order to provide a relatively smooth exterior of the vehicle when the tailgate is closed, the tailgate comprises a frameless glass panel (10) which is hinged by direct attachment of the glass panel (10) to a pair of hinges (11). A metal member (18) extends across the bottom-of-the-glass panel (10) on the underside thereof to reinforce the panel and to provide a mounting for a lock assembly (31) for the tailgate, the member (18) being secured to the panel (10) by the lock assembly (31), a wiper drive assembly (25) and a plug assembly (37-39). The underside marginal edges (14-17) of the glass panel are rendered opaque by a paint or ceramic coating, the lower opaque marginal edge (17) masking the member (18).

FIG. 1.



EP 0 044 649 A1

"VEHICLE TAILGATE ASSEMBLY"

This invention relates to vehicle tailgate assemblies comprising a frameless glass tailgate panel, hinge means attached directly to the glass adjacent one edge of the panel to hinge the panel in the tailgate aperture of the vehicle and a locking device disposed adjacent an opposite edge of the panel for locking the panel in the closed position in the tailgate aperture.

It is known in such assemblies to mount a locking device and other elements directly on the glass panel. Considerable loads can be imposed on the glass by a locking device and other elements and, in order to withstand such loads, the glass has to have a substantial thickness which increases the height of the tailgate as there is a risk of the glass fracturing.

This invention provides a vehicle tailgate assembly comprising a frameless glass tailgate panel, hinge means attached directly to the glass adjacent one edge of the panel to hinge the panel in the tailgate aperture of the vehicle and a locking device disposed adjacent an opposite edge of the panel for locking the panel in the closed position in the tailgate aperture, characterised in that a mounting member is provided which extends along the inner side of said opposite edge of the panel and in that the locking device is provided with means for screwing the mounting member to the panel.

Thus the assembly according to the present invention

BAD ORIGINAL

has the advantage that the mounting member acts as a reinforcement for the glass panel, and that the locking device itself is used in securing the member to the glass panel.

The mounting member may be used for mounting door fittings such as a window wiper and a counter-balance strut on the glass panel.

The following is a description of some specific embodiments of the invention, reference being made to the accompanying drawings in which:

Figure 1 is an exploded perspective view of one embodiment of the invention;

Figure 2 is a sectional view of part of the embodiment taken along lines 2-2 in Figure 1; and

Figure 3 is a sectional view similar to Figure 2 showing a modified form of the embodiment.

A frameless glass pane 10 comprising a tailgate assembly for a vehicle is hinged at its upper edge for pivotable movement about an axis extending transversely of a vehicle by a pair of hinges 11, one element 12 of which is secured to the glass and the other element 13 to a part of the vehicle rear structure. The underside only of the glass within the peripheral marginal edges 14, 15, 16, 17 is rendered opaque by any suitable method such as for example by painting or the application of a thin ceramic layer which is fired on to the glass surface by a known process. The bottom opaque margin 17 on the glass is of

BAD ORIGINAL

greater width for a purpose which will become apparent later.

The lower marginal edge of the glass 17 is reinforced along its length by an elongate metal member 18 formed with a shallow recess 19 and a peripheral flange 20. The flange 20 along one longer side of the member is formed into a U-section channel 21 such that with the member located on the underside of the glass, the peripheral flange 20 abuts the glass and the U-section 21 is engaged over the lower edge of the glass as shown in Figure 2. In this position, the member is masked from external view by the width of the opaque bottom margin 17 on the glass 10.

A tailgate wiper electric motor 22 has a mounting flange 23 which is secured to the external surface of the member 18 of the rail by two screws 24 engaging into nuts 24a located in the recess 18 in the member and secured to the base by welding. A wiper spindle and housing 25 extends from the motor and passes through holes 26, 26a in the base and glass respectively at one end thereof such that the spindle and a screw threaded end of the spindle housing protrudes through the glass. A resilient sealing ring 27 and cover ring 28 is engaged over the spindle housing protruding from the glass and are secured thereon by a nut 29 engaged over a screw-threaded end portion of the spindle housing. A wiper arm and blade assembly 30 is secured to the end of the spindle in an orthodox manner. Means to provide electrical current to drive the motor 22 may comprise a suitable contact plate arrangement (not shown) which is opened when the tailgate is lifted, this arrangement may also be utilized to provide

BAD ORIGINAL

electrical current to the elements of a heater if fitted to the glass lift of the tailgate.

A lock barrel assembly 31 having a head 32 and a screw-threaded shank 33 engages through holes 34, 34a, in the glass and rail respectively located substantially midway along the length of the rail such that the end of the lock barrel assembly protrudes through the member and is engaged by a nut (not shown) to secure the lock barrel to the glass and rail. An axial extension of the lock barrel spindle engages a latch assembly (not shown) secured to the exterior surface of the member 18 by screws engaging nuts 35 welded to the member 18 in the recess 19. At the other end of the rail remote from the wiper motor 22, hole 36 in the glass is in register with hole 36a in the base of the rail and a mushroom headed plug 37 has a shank internally screw-threaded (not shown) for part of its length towards the head engaging in hole 36 whilst a shouldered mushroom headed collar 38 engages in hole 36a, the two elements being secured together by screw 39 engaging through the collar 38 into the internally screw-threaded shank of the plug 37 to secure that end of the member 18 to the glass, whilst the methods of mounting the lock barrel and wiper motor performs similar functions at spaced intervals along the member. Means to counter-balance the weight of the tailgate when it is being pivoted upwardly comprises a telescopic gas spring strut 40 located adjacent one edge of the tailgate at the lower end thereof, the lower end of the strut terminating in a ball joint 41, the ball part of which comprises a hexagonal

BAD ORIGINAL

shoulder 42 and screw-threaded shank 43 which engages into a nut 44 welded or clinched to the member 18 in the recess 19, a washer 45 being first fitted over the screw-threaded shank 42. The other end 46 of the strut is pivotably connected to the vehicle body structure.

In all cases where there are elements passing through the glass 10, waterproofing is effected by suitable means such as resilient washers interposed between the exterior of the glass and the appropriate part of the element.

It will be appreciated that various modifications can be made to the specific embodiments described hereinbefore without departing from the scope of the claims of the invention.

For example, in the case where a tailgate wiper and motor is not fitted, the member 18 can be secured to the glass 10 at that end by a further plug 37, collar 38, and screw 39 engaged through holes 26, 26a the contact plate hitherto being used inter alia for supplying electrical current to the wiper motor can be deleted and the gas spring strut can then be used as a conductor for supplying electric current to the tailgate glass heater elements in a manner known per se. Additionally, the location of the lock barrel assembly in holes 34, 34a, and the plug 31 and collar 37 in holes 35, 35a may be reversed, the latch being operated by the lock barrel assembly and the lid of the lock barrel assembly protruding from the member being suitably designed for this purpose.

BAD ORIGINAL

In the case where a rear spoiler is considered desirable this can easily be achieved as shown for example in Figure 3 wherein the spoiler comprises a single rigid plastics mounting 47 having suitably recessed holes 48 to permit the attachment of the member and units thereon as described hereinbefore. Other arrangements are possible utilising for example, reinforcement base plates to which the spoiler is attached. In any case, a suitable aperture would be provided in the spoiler to permit a jet of washing fluid to pass therethrough on to the glass 10. Two gas spring struts may be fixed to the tailgate, one at each side thereof instead of a single strut on one side only of the tailgate as described above.

BAD ORIGINAL

CLAIMS:

1. A vehicle tailgate assembly comprising a frameless glass tailgate panel (10), hinge means (11) attached directly to the glass adjacent one edge (15) of the panel to hinge the panel in the tailgate aperture of the vehicle and a locking device (31) disposed adjacent an opposite edge (17) of the panel for locking the panel in the closed position in the tailgate aperture, characterised in that a mounting member (18) is provided which extends along the inner side of said opposite edge (17) of the panel and in that the locking device (31) is provided with means (33) for securing the mounting member (18) to the panel (10).

2. A vehicle tailgate assembly as claimed in claim 1, characterised in that one or more door fittings are mounted on the mounting member (18).

3. A vehicle tailgate assembly as claimed in claim 2, characterised in that one or more of the fittings have mountings which both mount the fittings on the mounting member (18) and secure the mounting member to the glass panel (10).

4. A vehicle tailgate assembly as claimed in any of the preceding claims characterised in that a lock barrel (31) extends through the glass panel (10) and mounting member (18), the barrel

BAD ORIGINAL

having a shoulder which engages the outer side of the glass panel, and a screw threaded shank (33) which extends through the glass panel and the mounting member and receives a nut which secures the barrel to the panel and member and secures the panel and member together.

5. A vehicle tailgate assembly as claimed in claim 4, characterised in that a latch assembly is mounted on the outer side of the mounting member and an element of the lock barrel projects into the latch assembly to operate the latch.

6. A vehicle tailgate assembly as claimed in any of the preceding claims characterised in that a window wiper drive (25) is mounted on the outer side of the mounting member (18) and has a hub projecting through openings (26, 26a) in the mounting member and the glass panel to receive a nut (29) which secures the hub, panel and mounting member together, a drive spindle projecting through the hub carrying a windscreen wiper arm (30) on which a wiper blade is mounted for wiping the outer surface of the panel (10).

7. A vehicle tailgate assembly as claimed in any of the preceding claims characterised in that at least one fastening device (37,38,39) is provided which extends through the glass panel and mounting member to assist in securing the member to the panel.

BAD ORIGINAL

8. A vehicle tailgate assembly as claimed in any of the preceding claims characterised in that means (44) are provided on the mounting member for attachment of at least one counter balance strut (40) for counter-balancing the tailgate panel in the open position.

9. A vehicle tailgate assembly as claimed in claim 8 characterised in that attachment means for an end of the counter-balance strut comprises a nut (44) fixed to the mounting member into which a screw threaded shank (43) projecting from a ball joint (41) at one end of a counter balance strut (40) is secured.

10. A vehicle tailgate assembly as claimed in any of the preceding claims, characterised in that the mounting member comprises an elongate member (18) extending the length of the said opposite edge (17) of the glass panel (10) having a main dished area (19) and a peripheral rim (20) encircling the dished area which engages the glass so that the dished area is spaced from the panel, the attachment means for one or more fittings being located in the dished area and the area (17) of the glass panel over which the mounting member extends being rendered opaque so that the fitting attachments are not visible through the panel.

11. A vehicle tailgate assembly as claimed in claim 10, characterised in that the mounting member has a channel (21) extending along the rim of one side thereof which engages

BAD ORIGINAL

around the adjacent edge of the glass panel (10).

BAD ORIGINAL

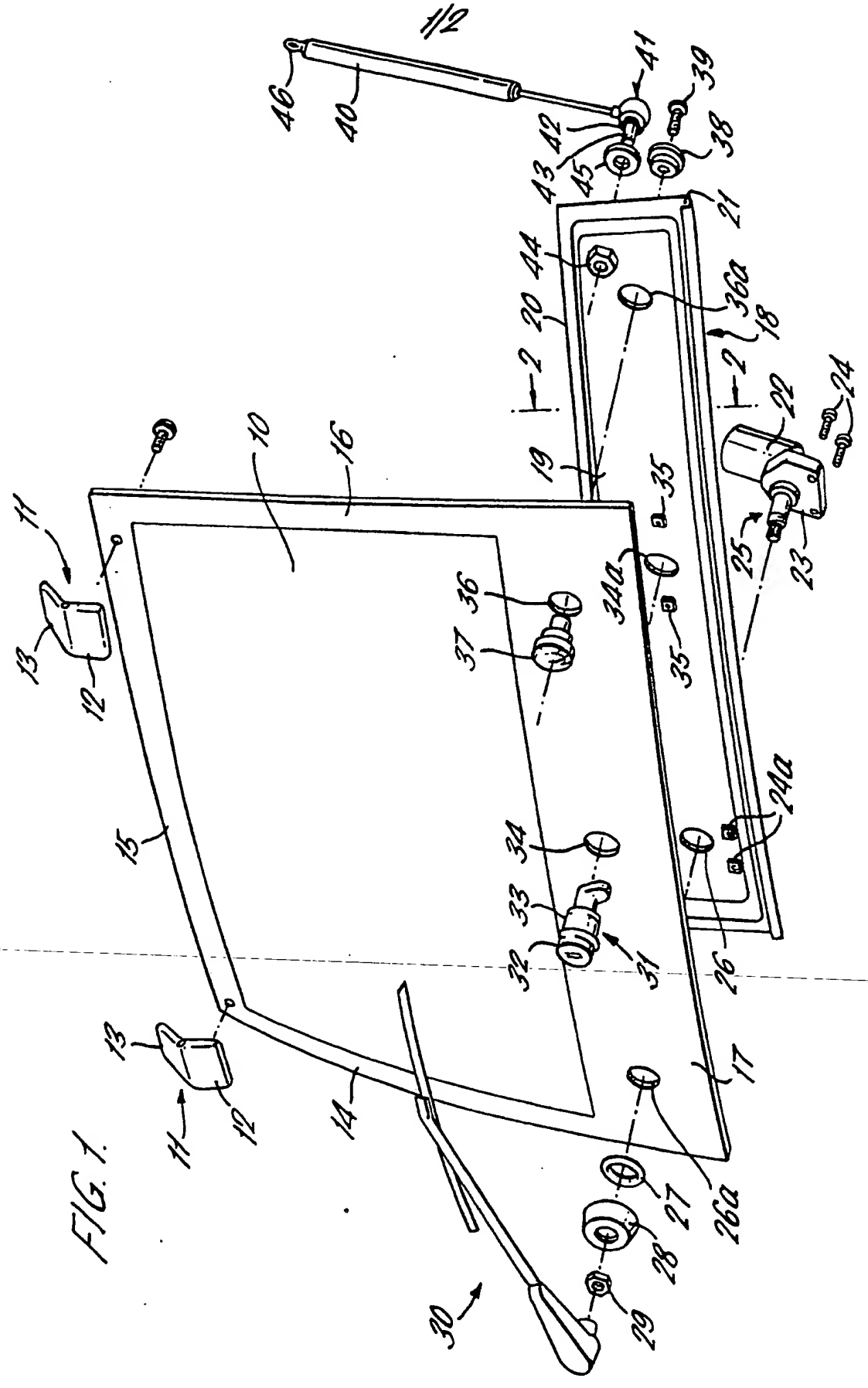

112
46
40
41
39
38
42
43
45
21
44
20
36a
18
2
2
22
24
19
10
16
11
35
34a
25
23
36
37
35
13
12
15
24a
34
33
32
31
26
13
11
12
14
17
27
26a
28
29
30

FIG. 1.

FIG. 2.

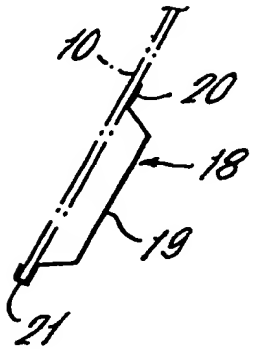
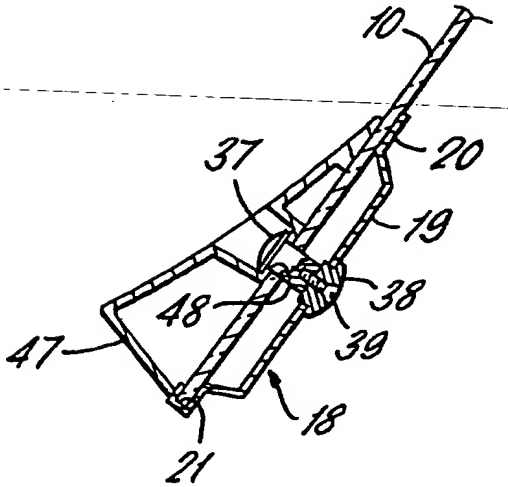


FIG. 3.



European Patent Office

EUROPEAN SEARCH REPORT

Application number EP 81 30 3048

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	FR - A - 2 334 553 (PORSCHE) * Whole document * --	1	B 60 J 5/10
	US - A - 3 214 213 ((HEZLER) * Column 2, lines 39-42 * --	1,4,5	
EP	GB - A - 2 050 479 (NISSAN) * Whole document * & DE - A - 3 017 527 --	1	TECHNICAL FIELDS SEARCHED (Int. Cl.³) B 60 J B 60 S
P	US - A - 4 261 612 (CHRYSLER) * Whole document * --	1	
P	FR - A - 2 447 311 (PORSCHE) * Whole document * --	1	
	REVUE AUTOMOBILE, vol. 73, no. 12, March 1978, M. STOOP "Les carrosseries spéciales, rêves matérialisés" under the heading "Au salon" refering to the OPEL citycar. page 5,6 Whole article * --	1	CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
	FR - A - 2 378 666 (CHRYSLER) * Claim 1; figure 5 * & GB - A - 1 543 101 -- ./.	1,6	

&: member of the same patent family corresponding document

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	08-10-1981	SCHMITTER

European Patent Office

EUROPEAN SEARCH REPORT

Application number EP 81 30 3048

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl.³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	REVUE AUTOMOBILE, vol. 70, no. 30, 11e feuille, 21-07-1977, The pictures undertitled "Le hayon arrière de la Chrysler Sunbeam est entièrement en verre" and "On remarque l'entraînement de l'essuie-glace.." * Whole article * --	1,6,8	
	GB - A - 1 448 892 (CHRYSLER) * Whole document * --	1,6	TECHNICAL FIELDS SEARCHED (Int. Cl ³)
A	DE - B - 2 658 745 (SWF) ----		